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EXAMINER	
YAO, KWANG BIN	

ART UNIT	PAPER NUMBER
2667	

DATE MAILED: 03/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	09/879,761	BAHADIROGLU, MURAT I.
	Examiner	**Art Unit**
	Kwang B. Yao	2667

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 July 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *14-46* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *14-46* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *7/28/04*.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 14-46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aoki et al. (US 6,757,255) in view of Ketcham (US 6,363,429).

Aoki et al. discloses a communication system comprising the following features: regarding claim 14, a method for optimizing data packet transmission through a connection between a sending node (Fig. 1, communication devices 17; Figs. 4, 5, Transmitting-side communication device) and a receiving node (Fig. 1, communication devices 18; Figs. 4, 5, Receiving-side communications device) in a data communication network, comprising the steps of: (a) periodically determining current network conditions in the connection between the sending node (Fig. 1, communication devices 17; Figs. 4, 5, Transmitting-side communication device) and the receiving node (Fig. 1, communication devices 18; Figs. 4, 5, Receiving-side communications device) wherein the network conditions pertain to the latency and jitter (Fig. 12, ROUND TRIP TIME) of packet transmission between the sending node (Fig. 1, communication devices 17; Figs. 4, 5, Transmitting-side communication device) and receiving node (Fig. 1, communication devices 18; Figs. 4, 5, Receiving-side communications device), and (b) determining from the current network conditions an optimum packet size (Fig. 12, MAXIMUM SEGMENT SIZE; see column 11, lines 21-61) for transmission of packet data between the

sending node (Fig. 1, communication devices 17; Figs. 4, 5, Transmitting-side communication device) and the receiving node (Fig. 1, communication devices 18; Figs. 4, 5, Receiving-side communications device); regarding claim 15, the method for optimizing data packet transmission through a connection between a sending node (Fig. 1, communication devices 17; Figs. 4, 5, Transmitting-side communication device) and a receiving node (Fig. 1, communication devices 18; Figs. 4, 5, Receiving-side communications device) of claim 14, wherein in step (b) further includes:(1) determining the optimum packet size (Fig. 12, MAXIMUM SEGMENT SIZE; see column 11, lines 21-61) for transmission of packet data between the sending node (Fig. 1, communication devices 17; Figs. 4, 5, Transmitting-side communication device) and the receiving node (Fig. 1, communication devices 18; Figs. 4, 5, Receiving-side communications device) for a given amount and type of data (Fig. 7, TOTAL NUMBER OF PACKETS, TOTAL DATA QUANTITY) to be communicated between the sending node (Fig. 1, communication devices 17; Figs. 4, 5, Transmitting-side communication device) and the receiving node (Fig. 1, communication devices 18; Figs. 4, 5, Receiving-side communications device); regarding claim 16, wherein step (a) further includes the steps of: (a1) transmitting a sequence (Figs. 8 and 9; see column 9, line 17 to column 10, line 17) of monitor packets of a selected size from the sending node (Fig. 1, communication devices 17; Figs. 4, 5, Transmitting-side communication device) to the receiving node (Fig. 1, communication devices 18; Figs. 4, 5, Receiving-side communications device) at a selected inter-packet interval (Fig. 7, SESSION START TIME, SESSION END TIME), (a2) in the receiving node (Fig. 1, communication devices 18; Figs. 4, 5, Receiving-side communications device), reflecting the monitor packets from the receiving node (Fig. 1, communication devices 18; Figs. 4, 5, Receiving-side communications device) to the

sending node (Fig. 1, communication devices 17; Figs. 4, 5, Transmitting-side communication device) in the sequence (Figs. 8 and 9; see column 9, line 17 to column 10, line 17) in which the monitor packets are received at the sending node (Fig. 1, communication devices 17; Figs. 4, 5, Transmitting-side communication device), and (a3) in the sending bode and upon receiving the reflected monitor packets from the receiving node (Fig. 1, communication devices 18; Figs. 4, 5, Receiving-side communications device), determining network conditions in the connection between the sending node (Fig. 1, communication devices 17; Figs. 4, 5, Transmitting-side communication device) and the receiving node (Fig. 1, communication devices 18; Figs. 4, 5, Receiving-side communications device) wherein the network conditions pertain to the latency and jitter (Fig. 12, ROUND TRIP TIME) of packet transmission between the sending node (Fig. 1, communication devices 17; Figs. 4, 5, Transmitting-side communication device) and receiving node (Fig. 1, communication devices 18; Figs. 4, 5, Receiving-side communications device) for monitor packets of a known size (Fig. 7, TOTAL NUMBER OF PACKETS, TOTAL DATA QUANTITY); regarding claim 17, each monitor packet includes a departure time (Fig. 7, SESSION START TIME) representing a time the monitor packet was transmitted from the sending node (Fig. 1, communication devices 17; Figs. 4, 5, Transmitting-side communication device), a packet size representing a size of the monitor packet and a packet number representing a numerical position of the monitor packet in the sequence (Figs. 8 and 9; see column 9, line 17 to column 10, line 17) of monitor packets; regarding claim 18, wherein: (1) the network conditions determined through the monitor packets include a maximum two way delay time (Fig. 12, ROUND TRIP TIME) for the transmission and reflection of a monitor packet, a minimum two way delay time (Fig. 12, ROUND TRIP TIME) for the transmission and reflection of a

monitor packet, an average two way delay time (Fig. 12, ROUND TRIP TIME) for the monitor packets, an average jitter (Fig. 12, ROUND TRIP TIME) of the monitor packets, and a number of packets out of sequence (Figs. 8 and 9; see column 9, line 17 to column 10, line 17); regarding claim 19, wherein the network conditions determined through the monitor packets further include: (2) a number of packets lost; regarding claim 20, wherein: (1) the network conditions determined through the monitor packets include an available bandwidth (Fig. 12, ESTIMATE EFFECTIVE BANDWIDTH) and a jitter (Fig. 12, ROUND TRIP TIME) of the connection; regarding claim 21, wherein: the network conditions determined through the monitor packets further include an average jitter (Fig. 12, ROUND TRIP TIME), a maximum jitter (Fig. 12, ROUND TRIP TIME) and a minimum jitter (Fig. 12, ROUND TRIP TIME); regarding claim 22, wherein: the network conditions determined through the monitor packets further include a sequence (Figs. 8 and 9; see column 9, line 17 to column 10, line 17) in which the monitor packets are received at the receiving node (Fig. 1, communication devices 18; Figs. 4, 5, Receiving-side communications device); regarding claim 23, wherein: the network conditions determined through the monitor packets further include a number of monitor packets lost; regarding claim 24, further comprising the step of: (c) transmitting data packets from the sending node (Fig. 1, communication devices 17; Figs. 4, 5, Transmitting-side communication device) to the receiving node (Fig. 1, communication devices 18; Figs. 4, 5, Receiving-side communications device) with packet sizes and at inter-packet interval (Fig. 7, SESSION START TIME, SESSION END TIME)s determined according to the network conditions; regarding claim 25, further comprising the steps of: (a1) transmitting a sequence (Figs. 8 and 9; see column 9, line 17 to column 10, line 17) of monitor packets from the sending node (Fig. 1, communication

devices 17; Figs. 4, 5, Transmitting-side communication device) to the receiving node (Fig. 1, communication devices 18; Figs. 4, 5, Receiving-side communications device), (a2) in the receiving node (Fig. 1, communication devices 18; Figs. 4, 5, Receiving-side communications device), reflecting the monitor packets from the receiving node (Fig. 1, communication devices 18; Figs. 4, 5, Receiving-side communications device) to the sending node (Fig. 1, communication devices 17; Figs. 4, 5, Transmitting-side communication device) in the sequence (Figs. 8 and 9; see column 9, line 17 to column 10, line 17) in which the monitor packets are received at the sending node (Fig. 1, communication devices 17; Figs. 4, 5, Transmitting-side communication device), and (a3) in the sending node (Fig. 1, communication devices 17; Figs. 4, 5, Transmitting-side communication device) and upon receiving the reflected monitor packets from the receiving node (Fig. 1, communication devices 18; Figs. 4, 5, Receiving-side communications device), determining network conditions in the connection between the sending node (Fig. 1, communication devices 17; Figs. 4, 5, Transmitting-side communication device) and the receiving node (Fig. 1, communication devices 18; Figs. 4, 5, Receiving-side communications device) wherein the network conditions pertain to the latency and jitter (Fig. 12, ROUND TRIP TIME) of packet transmission between the sending node (Fig. 1, communication devices 17; Figs. 4, 5, Transmitting-side communication device) and receiving node (Fig. 1, communication devices 18; Figs. 4, 5, Receiving-side communications device) for monitor packets of a known size (Fig. 7, TOTAL NUMBER OF PACKETS, TOTAL DATA QUANTITY) and known inter-packet transmission interval (Fig. 7, SESSION START TIME, SESSION END TIME), and (c) in the sending node (Fig. 1, communication devices 17; Figs. 4, 5, Transmitting-side communication device) and from the network conditions, determining an

optimum packet size (Fig. 12, MAXIMUM SEGMENT SIZE; see column 11, lines 21-61) for transmitting packets from (Fig. 5, PACKET 1, ..., N) the sending node (Fig. 1, communication devices 17; Figs. 4, 5, Transmitting-side communication device) to the receiving node (Fig. 1, communication devices 18; Figs. 4, 5, Receiving-side communications device); regarding claim 26, further comprising the steps of: (d) in the receiving node (Fig. 1, communication devices 18; Figs. 4, 5, Receiving-side communications device), determining network conditions from the received monitor packets; regarding claim 27, further comprising the steps of: (e) in the receiving node (Fig. 1, communication devices 18; Figs. 4, 5, Receiving-side communications device), storing the network conditions in one or more condition records; regarding claim 28, (d) returning the network conditions determined in the receiving node (Fig. 1, communication devices 18; Figs. 4, 5, Receiving-side communications device) to the sending node (Fig. 1, communication devices 17; Figs. 4, 5, Transmitting-side communication device), and (e) in the sending node (Fig. 1, communication devices 17; Figs. 4, 5, Transmitting-side communication device), updating the optimum packet size (Fig. 12, MAXIMUM SEGMENT SIZE; see column 11, lines 21-61) using the network conditions determined in the receiving node (Fig. 1, communication devices 18; Figs. 4, 5, Receiving-side communications device); regarding claim 29, a method for optimizing data packet transmission through a connection between a sending node (Fig. 1, communication devices 17; Figs. 4, 5, Transmitting-side communication device) and a receiving node (Fig. 1, communication devices 18; Figs. 4, 5, Receiving-side communications device) in a data communication network, comprising the steps of: (a) transmitting packets from (Fig. 5, PACKET 1, ..., N) the sending node (Fig. 1, communication devices 17; Figs. 4, 5, Transmitting-side communication device) to the receiving node (Fig. 1,

communication devices 18; Figs. 4, 5, Receiving-side communications device), (b) in the receiving node (Fig. 1, communication devices 18; Figs. 4, 5, Receiving-side communications device) and for each packet received from the sending node (Fig. 1, communication devices 17; Figs. 4, 5, Transmitting-side communication device), generating and transmitting to the sending node (Fig. 1, communication devices 17; Figs. 4, 5, Transmitting-side communication device) an acknowledgment (Fig. 5, RECEIVING ACKNOWLEDGEMENT PACKET) of receipt of the packet, and (c) in the sending node (Fig. 1, communication devices 17; Figs. 4, 5, Transmitting-side communication device) and upon receiving the acknowledgment (Fig. 5, RECEIVING ACKNOWLEDGEMENT PACKET)s of packets from the receiving node (Fig. 1, communication devices 18; Figs. 4, 5, Receiving-side communications device), determining network conditions in the connection between the sending node (Fig. 1, communication devices 17; Figs. 4, 5, Transmitting-side communication device) and the receiving node (Fig. 1, communication devices 18; Figs. 4, 5, Receiving-side communications device) wherein the network conditions pertain to the latency and jitter (Fig. 12, ROUND TRIP TIME) of packet transmission between the sending node (Fig. 1, communication devices 17; Figs. 4, 5, Transmitting-side communication device) and receiving node (Fig. 1, communication devices 18; Figs. 4, 5, Receiving-side communications device) for monitor packets of a known size (Fig. 7, TOTAL NUMBER OF PACKETS, TOTAL DATA QUANTITY) and known inter-packet transmission interval (Fig. 7, SESSION START TIME, SESSION END TIME), and (d) in the receiving node (Fig. 1, communication devices 18; Figs. 4, 5, Receiving-side communications device) and from the network conditions, determining an optimum packet size (Fig. 12, MAXIMUM SEGMENT SIZE; see column 11, lines 21-61) for transmission of data packets to

the receiving node (Fig. 1, communication devices 18; Figs. 4, 5, Receiving-side communications device); regarding claim 30, a method for optimizing data packet transmission through a connection between a sending node (Fig. 1, communication devices 17; Figs. 4, 5, Transmitting-side communication device) and a receiving node (Fig. 1, communication devices 18; Figs. 4, 5, Receiving-side communications device) in a data communication network, comprising the steps of: (a) transmitting a sequence (Figs. 8 and 9; see column 9, line 17 to column 10, line 17) of data packets from the sending node (Fig. 1, communication devices 17; Figs. 4, 5, Transmitting-side communication device) to the receiving node (Fig. 1, communication devices 18; Figs. 4, 5, Receiving-side communications device), (b) in the receiving node (Fig. 1, communication devices 18; Figs. 4, 5, Receiving-side communications device), determining network conditions from the received data packets (c) returning the network conditions determined in the receiving node (Fig. 1, communication devices 18; Figs. 4, 5, Receiving-side communications device) to the sending node (Fig. 1, communication devices 17; Figs. 4, 5, Transmitting-side communication device), and (d) in the sending node (Fig. 1, communication devices 17; Figs. 4, 5, Transmitting-side communication device), using the network conditions determined in the receiving node (Fig. 1, communication devices 18; Figs. 4, 5, Receiving-side communications device) to determine an optimum packet for the transmission of data packets from the sending node (Fig. 1, communication devices 17; Figs. 4, 5, Transmitting-side communication device) to the receiving node (Fig. 1, communication devices 18; Figs. 4, 5, Receiving-side communications device); regarding claim 31, an adaptive packet mechanism for optimizing data packet transmission through a connection between a sending node (Fig. 1, communication devices 17; Figs. 4, 5, Transmitting-side communication device)

and a receiving node (Fig. 1, communication devices 18; Figs. 4, 5, Receiving-side communications device) in a data communication network, comprising: (a) a sending node (Fig. 1, communication devices 17; Figs. 4, 5, Transmitting-side communication device) packet transfer engine and a receiving node (Fig. 1, communication devices 18; Figs. 4, 5, Receiving-side communications device) packet transfer engine communicating through the connection for periodically determining current network conditions in the connection between the sending node (Fig. 1, communication devices 17; Figs. 4, 5, Transmitting-side communication device) and the receiving node (Fig. 1, communication devices 18; Figs. 4, 5, Receiving-side communications device) wherein the network conditions pertain to the latency and jitter (Fig. 12, ROUND TRIP TIME) of packet transmission between the sending node (Fig. 1, communication devices 17; Figs. 4, 5, Transmitting-side communication device) and receiving node (Fig. 1, communication devices 18; Figs. 4, 5, Receiving-side communications device), and (b) a collector/controller for determining from the current network conditions an optimum packet size (Fig. 12, MAXIMUM SEGMENT SIZE; see column 11, lines 21-61) for transmission of packet data between the sending node (Fig. 1, communication devices 17; Figs. 4, 5, Transmitting-side communication device) and the receiving node (Fig. 1, communication devices 18; Figs. 4, 5, Receiving-side communications device); regarding claim 32, (1) the collector/controller determines the optimum packet size (Fig. 12, MAXIMUM SEGMENT SIZE; see column 11, lines 21-61) for transmission of packet data between the sending node (Fig. 1, communication devices 17; Figs. 4, 5, Transmitting-side communication device) and the receiving node (Fig. 1, communication devices 18; Figs. 4, 5, Receiving-side communications device) for a given amount and type of data (Fig. 7, TOTAL NUMBER OF PACKETS, TOTAL DATA QUANTITY) to be

communicated between the sending node (Fig. 1, communication devices 17; Figs. 4, 5, Transmitting-side communication device) and the receiving node (Fig. 1, communication devices 18; Figs. 4, 5, Receiving-side communications device); regarding claim 33, (a1) the sending node (Fig. 1, communication devices 17; Figs. 4, 5, Transmitting-side communication device) packet transfer engine is responsive to the collector/controller for transmitting a sequence (Figs. 8 and 9; see column 9, line 17 to column 10, line 17) of monitor packets of a selected size from the sending node (Fig. 1, communication devices 17; Figs. 4, 5, Transmitting-side communication device) to the receiving node (Fig. 1, communication devices 18; Figs. 4, 5, Receiving-side communications device) at a selected inter-packet interval (Fig. 7, SESSION START TIME, SESSION END TIME), (a2) the receiving node (Fig. 1, communication devices 18; Figs. 4, 5, Receiving-side communications device) packet transfer engine is responsive to monitor packets received from the sending node (Fig. 1, communication devices 17; Figs. 4, 5, Transmitting-side communication device) for reflecting the monitor packets from the receiving node (Fig. 1, communication devices 18; Figs. 4, 5, Receiving-side communications device) to the sending node (Fig. 1, communication devices 17; Figs. 4, 5, Transmitting-side communication device) in the sequence (Figs. 8 and 9; see column 9, line 17 to column 10, line 17) in which the monitor packets are received at the sending node (Fig. 1, communication devices 17; Figs. 4, 5, Transmitting-side communication device), and (a3) the sending node (Fig. 1, communication devices 17; Figs. 4, 5, Transmitting-side communication device) packet transfer engine is responsive to reflected monitor packets received from the receiving node (Fig. 1, communication devices 18; Figs. 4, 5, Receiving-side communications device) for determining network conditions in the connection between the sending node (Fig. 1,

communication devices 17; Figs. 4, 5, Transmitting-side communication device) and the receiving node (Fig. 1, communication devices 18; Figs. 4, 5, Receiving-side communications device) wherein the network conditions pertain to the latency and jitter (Fig. 12, ROUND TRIP TIME) of packet transmission between the sending node (Fig. 1, communication devices 17; Figs. 4, 5, Transmitting-side communication device) and receiving node (Fig. 1, communication devices 18; Figs. 4, 5, Receiving-side communications device) for monitor packets of a known size (Fig. 7, TOTAL NUMBER OF PACKETS, TOTAL DATA QUANTITY) and known inter-packet transmission interval (Fig. 7, SESSION START TIME, SESSION END TIME); regarding claim 34, each monitor packet includes a departure time (Fig. 7, SESSION START TIME) representing a time the monitor packet was transmitted from the sending node (Fig. 1, communication devices 17; Figs. 4, 5, Transmitting-side communication device), a packet size representing a size of the monitor packet and a packet number representing a numerical position of the monitor packet in the sequence (Figs. 8 and 9; see column 9, line 17 to column 10, line 17) of monitor packets; regarding claim 35, (1) the network conditions determined through the monitor packets include a maximum two way delay time (Fig. 12, ROUND TRIP TIME) for the transmission and reflection of a monitor packet, a minimum two way delay time (Fig. 12, ROUND TRIP TIME) for the transmission and reflection of a monitor packet, an average two way delay time (Fig. 12, ROUND TRIP TIME) for the monitor packets, an average jitter (Fig. 12, ROUND TRIP TIME) of the monitor packets, and a number of packets out of sequence (Figs. 8 and 9; see column 9, line 17 to column 10, line 17); regarding claim 36, wherein the network conditions determined through the monitor packets further include: (2) a number of packets lost; regarding claim 37, (1) the network conditions determined through the monitor

packets include an available bandwidth (Fig. 12, ESTIMATE EFFECTIVE BANDWIDTH) and a jitter (Fig. 12, ROUND TRIP TIME) of the connection; regarding claim 38, the network conditions determined through the monitor packets further include an average jitter (Fig. 12, ROUND TRIP TIME), a maximum jitter (Fig. 12, ROUND TRIP TIME) and a minimum jitter (Fig. 12, ROUND TRIP TIME); regarding claim 39, the network conditions determined through the monitor packets further include a sequence (Figs. 8 and 9; see column 9, line 17 to column 10, line 17) in which the monitor packets are received at the receiving node (Fig. 1, communication devices 18; Figs. 4, 5, Receiving-side communications device); regarding claim 40, the network conditions determined through the monitor packets further include a number of monitor packets lost; regarding claim 41, (c) the sending node (Fig. 1, communication devices 17; Figs. 4, 5, Transmitting-side communication device) packet transfer engine is responsive to the optimum packet size (Fig. 12, MAXIMUM SEGMENT SIZE; see column 11, lines 21-61) determined by the collector/controller for transmitting data packets from the sending node (Fig. 1, communication devices 17; Figs. 4, 5, Transmitting-side communication device) to the receiving node (Fig. 1, communication devices 18; Figs. 4, 5, Receiving-side communications device) with packet sizes and at inter-packet interval (Fig. 7, SESSION START TIME, SESSION END TIME)s determined according to the network conditions; regarding claim 42, (d) the receiving node (Fig. 1, communication devices 18; Figs. 4, 5, Receiving-side communications device) packet transfer engine is responsive to monitor packets received from the sending node (Fig. 1, communication devices 17; Figs. 4, 5, Transmitting-side communication device) for determining network conditions from the received monitor packets; regarding claim 43, (e) the receiving node (Fig. 1, communication devices 18; Figs. 4, 5,

Receiving-side communications device) packet transfer engine is responsive to the monitor packets received from the sending node (Fig. 1, communication devices 17; Figs. 4, 5, Transmitting-side communication device) for storing the network conditions in one or more condition records; regarding claim 44, (e) the receiving node (Fig. 1, communication devices 18; Figs. 4, 5, Receiving-side communications device) packet transfer engine is responsive to the monitor packets received from the sending node (Fig. 1, communication devices 17; Figs. 4, 5, Transmitting-side communication device) for providing the network conditions determined in the receiving node (Fig. 1, communication devices 18; Figs. 4, 5, Receiving-side communications device) to the collector/controller, and (f) the collector/controller is responsive to the network conditions determined in the receiving node (Fig. 1, communication devices 18; Figs. 4, 5, Receiving-side communications device) for updating the optimum packet size (Fig. 12, MAXIMUM SEGMENT SIZE; see column 11, lines 21-61) using the network conditions determined in the receiving node (Fig. 1, communication devices 18; Figs. 4, 5, Receiving-side communications device); regarding claim 45, an adaptive packet mechanism for optimizing data packet transmission through a connection between a sending node (Fig. 1, communication devices 17; Figs. 4, 5, Transmitting-side communication device) and a receiving node (Fig. 1, communication devices 18; Figs. 4, 5, Receiving-side communications device) in a data communication network, comprising: (a) a sending node (Fig. 1, communication devices 17; Figs. 4, 5, Transmitting-side communication device) packet transfer engine for transmitting packets from (Fig. 5, PACKET 1, ..., N) the sending node (Fig. 1, communication devices 17; Figs. 4, 5, Transmitting-side communication device) to the receiving node (Fig. 1, communication devices 18; Figs. 4, 5, Receiving-side communications device), (b) a receiving

node (Fig. 1, communication devices 18; Figs. 4, 5, Receiving-side communications device) packet acknowledgment (Fig. 5, RECEIVING ACKNOWLEDGEMENT PACKET) mechanism responsive to each packet received in the receiving node (Fig. 1, communication devices 18; Figs. 4, 5, Receiving-side communications device) from the sending node (Fig. 1, communication devices 17; Figs. 4, 5, Transmitting-side communication device) for generating and transmitting to the sending node (Fig. 1, communication devices 17; Figs. 4, 5, Transmitting-side communication device) packet transfer engine an acknowledgment (Fig. 5, RECEIVING ACKNOWLEDGEMENT PACKET) of receipt of the packet, (c) the sending node (Fig. 1, communication devices 17; Figs. 4, 5, Transmitting-side communication device) packet transfer engine being responsive to the acknowledgment (Fig. 5, RECEIVING ACKNOWLEDGEMENT PACKET)s of packets from the receiving node (Fig. 1, communication devices 18; Figs. 4, 5, Receiving-side communications device) for determining network conditions in the connection between the sending node (Fig. 1, communication devices 17; Figs. 4, 5, Transmitting-side communication device) and the receiving node (Fig. 1, communication devices 18; Figs. 4, 5, Receiving-side communications device) wherein the network conditions pertain to the latency and jitter (Fig. 12, ROUND TRIP TIME) of packet transmission between the sending node (Fig. 1, communication devices 17; Figs. 4, 5, Transmitting-side communication device) and receiving node (Fig. 1, communication devices 18; Figs. 4, 5, Receiving-side communications device) for monitor packets of a known size (Fig. 7, TOTAL NUMBER OF PACKETS, TOTAL DATA QUANTITY) and known inter-packet transmission interval (Fig. 7, SESSION START TIME, SESSION END TIME), and (d) a collector/controller responsive to the network conditions determining an optimum packet size (Fig. 12, MAXIMUM SEGMENT SIZE; see column 11,

lines 21-61) for transmission of data packets to the receiving node (Fig. 1, communication devices 18; Figs. 4, 5, Receiving-side communications device); regarding claim 46, an adaptive packet mechanism for optimizing data packet transmission through a connection between a sending node (Fig. 1, communication devices 17; Figs. 4, 5, Transmitting-side communication device) and a receiving node (Fig. 1, communication devices 18; Figs. 4, 5, Receiving-side communications device) in a data communication network, comprising: (a) a sending node (Fig. 1, communication devices 17; Figs. 4, 5, Transmitting-side communication device) packet transfer engine for transmitting a sequence (Figs. 8 and 9; see column 9, line 17 to column 10, line 17) of data packets from the sending node (Fig. 1, communication devices 17; Figs. 4, 5, Transmitting-side communication device) to the receiving node (Fig. 1, communication devices 18; Figs. 4, 5, Receiving-side communications device), (b) a receiving node (Fig. 1, communication devices 18; Figs. 4, 5, Receiving-side communications device) packet transfer engine for determining network conditions from the received data packets, and (d) a collector/controller responsive to the network conditions determined by the receiving node (Fig. 1, communication devices 18; Figs. 4, 5, Receiving-side communications device) packet transfer engine for determining an optimum packet size (Fig. 12, MAXIMUM SEGMENT SIZE; see column 11, lines 21-61) for the transmission of data packets from the sending node (Fig. 1, communication devices 17; Figs. 4, 5, Transmitting-side communication device) to the receiving node (Fig. 1, communication devices 18; Figs. 4, 5, Receiving-side communications device). See column 1-20.

Aoki et al. does not disclose the following features: regarding claim 14, determining an optimum inter-packet interval for transmission of packet data between the sending node and the

receiving node; regarding claim 15, determining the optimum inter-packet interval for transmission of packet data between the sending node and the receiving node; regarding claim 16, determining network conditions in the connection between the sending node and the receiving node wherein the network conditions pertain to the latency and fitter of packet transmission between the sending node and receiving node for monitor packets of known inter-packet transmission interval; regarding claim 25, in the sending node and from the network conditions, determining an optimum inter-packet interval for transmitting packets from the sending node to the receiving node; regarding claim 28, updating inter-packet interval using the network conditions determined in the receiving node; regarding claim 29, in the receiving node and from the network conditions, determining optimum inter-packet interval for transmission of data packets to the receiving node; regarding claim 30, using the network conditions determined in the receiving node to determine an optimum inter-packet interval for the transmission of data packets from the sending node to the receiving node; regarding claim 31; determining from the current network conditions an optimum inter-packet interval for transmission of packet data between the sending node and the receiving node; regarding claim 32, determines the optimum inter-packet interval for transmission of packet data between the sending node and the receiving node for a given amount and type of data to be communicated between the sending node and the receiving node; regarding claim 41, responsive to the optimum inter-packet interval determined by the collector/controller for transmitting data packets from the sending node to the receiving node; regarding claim 44, updating the optimum inter-packet interval using the network conditions determined in the receiving node; regarding claim 45, (d) determining an optimum inter-packet interval for transmission of data packets to the receiving node; regarding claim 46,

determining an optimum inter-packet interval for the transmission of data packets from the sending node to the receiving node.

Ketcham discloses a communication system comprising the following features: regarding claim 14, determining an optimum inter-packet interval (Fig. 4, DETERMINE AN OPTIMIZED AVERAGE PACKET SPACING PARAMETER 40; see column 8, line 32 to column 10, line 30)) for transmission of packet data between the sending node (Fig. 1, SOURCE NETWORK DEVICE 14) and the receiving node (Fig. 1, DESTINATION NETWORK DEVICE 16); regarding claim 15, determining the optimum inter-packet interval (Fig. 4, DETERMINE AN OPTIMIZED AVERAGE PACKET SPACING PARAMETER 40; see column 8, line 32 to column 10, line 30)) for transmission of packet data between the sending node (Fig. 1, SOURCE NETWORK DEVICE 14) and the receiving node (Fig. 1, DESTINATION NETWORK DEVICE 16); regarding claim 16, determining network conditions in the connection between the sending node (Fig. 1, SOURCE NETWORK DEVICE 14) and the receiving node (Fig. 1, DESTINATION NETWORK DEVICE 16) wherein the network conditions pertain to the latency and fitter of packet transmission between the sending node (Fig. 1, SOURCE NETWORK DEVICE 14) and receiving node (Fig. 1, DESTINATION NETWORK DEVICE 16) for monitor packets of known inter-packet transmission interval; regarding claim 25, in the sending node (Fig. 1, SOURCE NETWORK DEVICE 14) and from the network conditions, determining an optimum inter-packet interval (Fig. 4, DETERMINE AN OPTIMIZED AVERAGE PACKET SPACING PARAMETER 40; see column 8, line 32 to column 10, line 30)) for transmitting packets from the sending node (Fig. 1, SOURCE NETWORK DEVICE 14) to the receiving node (Fig. 1, DESTINATION NETWORK DEVICE 16); regarding claim 28, updating inter-packet

interval using the network conditions determined in the receiving node (Fig. 1, DESTINATION NETWORK DEVICE 16); regarding claim 29, in the receiving node (Fig. 1, DESTINATION NETWORK DEVICE 16) and from the network conditions, determining optimum inter-packet interval (Fig. 4, DETERMINE AN OPTIMIZED AVERAGE PACKET SPACING PARAMETER 40; see column 8, line 32 to column 10, line 30)) for transmission of data packets to the receiving node (Fig. 1, DESTINATION NETWORK DEVICE 16); regarding claim 30, using the network conditions determined in the receiving node (Fig. 1, DESTINATION NETWORK DEVICE 16) to determine an optimum inter-packet interval (Fig. 4, DETERMINE AN OPTIMIZED AVERAGE PACKET SPACING PARAMETER 40; see column 8, line 32 to column 10, line 30)) for the transmission of data packets from the sending node (Fig. 1, SOURCE NETWORK DEVICE 14) to the receiving node (Fig. 1, DESTINATION NETWORK DEVICE 16); regarding claim 31; determining from the current network conditions an optimum inter-packet interval (Fig. 4, DETERMINE AN OPTIMIZED AVERAGE PACKET SPACING PARAMETER 40; see column 8, line 32 to column 10, line 30)) for transmission of packet data between the sending node (Fig. 1, SOURCE NETWORK DEVICE 14) and the receiving node (Fig. 1, DESTINATION NETWORK DEVICE 16); regarding claim 32, determines the optimum inter-packet interval (Fig. 4, DETERMINE AN OPTIMIZED AVERAGE PACKET SPACING PARAMETER 40; see column 8, line 32 to column 10, line 30)) for transmission of packet data between the sending node (Fig. 1, SOURCE NETWORK DEVICE 14) and the receiving node (Fig. 1, DESTINATION NETWORK DEVICE 16) for a given amount and type of data to be communicated between the sending node (Fig. 1, SOURCE NETWORK DEVICE 14) and the receiving node (Fig. 1, DESTINATION NETWORK DEVICE 16); regarding claim 41,

responsive to the optimum inter-packet interval (Fig. 4, DETERMINE AN OPTIMIZED AVERAGE PACKET SPACING PARAMETER 40; see column 8, line 32 to column 10, line 30)) determined by the collector/controller for transmitting data packets from the sending node (Fig. 1, SOURCE NETWORK DEVICE 14) to the receiving node (Fig. 1, DESTINATION NETWORK DEVICE 16); regarding claim 44, updating the optimum inter-packet interval (Fig. 4, DETERMINE AN OPTIMIZED AVERAGE PACKET SPACING PARAMETER 40; see column 8, line 32 to column 10, line 30)) using the network conditions determined in the receiving node (Fig. 1, DESTINATION NETWORK DEVICE 16); regarding claim 45, (d) determining an optimum inter-packet interval (Fig. 4, DETERMINE AN OPTIMIZED AVERAGE PACKET SPACING PARAMETER 40; see column 8, line 32 to column 10, line 30)) for transmission of data packets to the receiving node (Fig. 1, DESTINATION NETWORK DEVICE 16); regarding claim 46, determining an optimum inter-packet interval (Fig. 4, DETERMINE AN OPTIMIZED AVERAGE PACKET SPACING PARAMETER 40; see column 8, line 32 to column 10, line 30)) for the transmission of data packets from the sending node (Fig. 1, SOURCE NETWORK DEVICE 14) to the receiving node (Fig. 1, DESTINATION NETWORK DEVICE 16). See column 1-15. It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify the system of Aoki et al., by using the features, as taught by Ketcham, in order to provide a better QoS communication system by automatically determining priority streams. See Ketcham, column 2, lines 30-42.

Conclusion

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Bournas (US 6,769,030) discloses a method for evaluate the packet size.

Kumar et al. (US 6,657,987) discloses a MAC scheduling method.

Tam (US 6,622,172) discloses a communication system.

Ito et al. (US 6,414,942) discloses a traffic generator.

Gringeri et al. (US 6,108,382) discloses a system for transmitting a video stream.

Mays et al. (US 5,384,770) discloses a packet assembler.

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kwang B. Yao whose telephone number is 571-272-3182. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chi H Pham can be reached on 571-272-3179. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

KWANG BIN YAO
PRIMARY EXAMINER

Kwang B. Yao
March 9, 2005